ENGLISH VERSION

CA-NET RS-232 Remote Control Protocol

NOV 2012

The built-in RS-232 port in the rear panel of the CA series amplifiers allows for an external device communication via a serial connection. This kind of connection uses a syntax which is very similar to the one used in the Ecler TP-NET protocol: it lets a client device get from and/or set the values of several parameters of a CA device (for instance, the CA40 or CA200z digital amplifiers), like volumes, mutes, equalisation tones, etc.

The RS-232 serial communication must fulfil the following specifications:

- Baud rate: **9600 (fixed, no auto-negotiation)**
- Data bits: **8**
- Parity: **None**
- Stop bits: **1**
- Flow control: **None**

It's not allowed to have more than one simultaneous access from several clients to the same CA device using the RS232 connection.

The protocol is simple and direct, syntax-friendly, making it easy to read, write and modify the generated code. It is based on messages with no begin delimiter: each message is self-delimited by the RS232 packet size, which is defined with a maximum of **80 ASCII characters**, and always including the character **LF** (0x0A) at the end of each message. All the messages must be written in **CAPITAL LETTERS**.

To let some control systems (like EXTRON®, CRESTRON®, AMX®, RTI®, VITY®, MEDIALON®, etc.) process the messages more easily, the CA device adds the character **LF** (0x0A) at the end of each message it sends. This way the client of the CA device can buffer the received messages to process them, when required. The CA device can also handle several messages received in a single RS232 packet by using the **LF** delimiter.

The available messages are built with one or more fields separated with blank spaces (= blank space):

<TYPE> [PARAM1] [PARAM2] [PARAM3] [PARAM4][LF]

The first field (**TYPE**) defines the **message type** and then, the required parameters for it (each kind of message requires a given number of parameters). The field **TYPE** can have these values:

- **GET**

- **SET**
- **DATA**
- **ERROR**

At the end of this document you'll find a table including all the available messages and their parameters for each model of CA compatible device.

The **GET & SET** messages can be sent from the client to the CA device. The **DATA** & **ERROR** messages can be sent from the CA device to the client.

The **SET** messages coming from a client device don't have an automatic acknowledgement with a **DATA** message sent from the CA device after it has processed the **SET** command. The client must update the values itself, sending the needed **GET** message to ask for a parameter's value when it requires confirmation from the device. On the other hand, when a local control in the CA unit occurs (front panel controls or infrared remote control), the CA device will automatically send the associated **DATA** command via its RS-232 interface.

A couple of special parameters for the **GET** and **SET** commands would require a detailed explanation:

- **AUTOLOAD_PRESET1**: its value (ON/OFF) defines whether preset number 1 must be recalled or not each time the CA device is powered ON, defining this way the default working mode at startup
- **PANEL_LOCKED**: its value (ON/OFF) defines whether the front panel controls (the rotary encoder in the case of the CA40, and the encoder and the function keys in the case of the CA200z) is enabled (PANEL_LOCKED=OFF) or disabled (PANEL_LOCKED=ON) for local management of the device. (see the CA40 or CA200z user manual for further details)

NOTES:

- The numerical values are always integer numbers without comma or dot symbols
- **<Input Name>** are text strings (without blank spaces) that identify an audio input of the CA device.

  For the CA40, there are 5 possible Input Names:

  - LINE1
  - LINE2

- MICRO
- LINE1_AND_MICRO
- LINE2_AND_MICRO

And 6 in the case of the CA200z:

- LINE1
- LINE2
- LINE2
- LINE4
- MICRO1
- MICRO2

- **<Preset Number>** is a numerical value that identifies one available Preset stored in the device's memory. It can be within the [1..5] range.
- **<Volume Level>** are numerical values in the [0…64] range that define values in a scale equivalent to [-inf...Maximum_Volume] in 1.25 dB steps.
- **<Tone Level>** are numerical values in the [-10…10] range that define values in a scale equivalent to [-10, -8, -6, -4, -2, 0, 2, 4, 6, 8, 10] dB. If the numerical value is not in this list, the unit will reply with an error message.
- **<Increment Value>** are numerical values in the [0…64] range that define a value in a scale equivalent to [Increment Value]x(1.25) dB, used to increase or decrease the current absolute value of a level.
- **<Threshold Level>** the allowed numerical values in this field are just 3 [20, 25, 30]. It defines a value in a scale equivalent to [20, 25, 30] dB below the nominal level value for a given audio input. If the numerical value is not in this list, the unit will reply with an error message.
- **<Depth Level>** the allowed numerical values in this field are just 4 [20, 30, 60, 80]. It defines a value in a scale equivalent to [20, 30, 60, 80] dB. If the numerical value is not in this list, the unit will reply with an error message.

- **<Attack Time Value>** the allowed numerical values in this field are just 4 [50, 100, 200, 300]. It defines a value in a scale equivalent to [50, 100, 200, 300] milliseconds. If the numerical value is not in this list, the unit will reply with an error message.

- **<Release Time Value>** the allowed numerical values in this field are just 5 [300, 500, 1000, 2000, 3000]. It defines a value in a scale equivalent to [300, 500, 1000, 2000, 3000] milliseconds. If the numerical value is not in this list, the unit will reply with an error message.

- **<Remote Select Value>** are text strings (without blank spaces) that identify the function of the analogue (0 – 10 VDC) remote control selector connected to a physical "REMOTE" port in the device.

  In the case of the CA40, there are just two possible string values for this parameter:

  - INPUTS
  - PRESETS

  And three in the case of the CA200z:

  - OFF
  - INPUTS
  - PRESETS

  Note: *In the CA40, a single REMOTE port admits the connection of a* **WPmVOL-SR** *unit, which has a volume control knob and a 5-position rotary switch, or selector. The selector can be used in any of these two modes:*

  - *INPUTS: to select the active audio source(s) (LINE1, LINE2, MICRO, LINE1_AND_MICRO or LINE2_AND_MICRO)*
  - *PRESETS: to recall any of the 5 presets in the memory of the unit, which store the full configuration of the unit, including volumes, EQ, etc.*

  The factory default working mode of the selector is ***INPUTS****, and it can just be modified to* ***PRESETS*** *by means of an RS-232 connection.*

In the CA200z there are two independent REMOTE ports, each one able to control one of the device's outputs when the CA200z has been configured in the ZONES A/B mode. Each selector can be used in any of these 3 modes:

- *INPUTS: to select the active audio LINE source (OFF, LINE1, LINE2, LINE3 or LINE4)*
- *PRESETS: to recall any of the 5 presets in the memory of the unit, which store the full configuration of the unit, including volumes, EQ, etc. Just one out of these two remote ports can be configured to recall presets, not both at the same time*
- *OFF: REMOTE port disabled.*

- **<Zone>** are text strings (without blank spaces) that identify a zone where the command will operate. In the CA200Z there are just two possible values for this parameter:
  - ZA (output labeled as ZA or L)
  - ZB (output labeled as ZB or R)

  When the <Zone> parameter is not specified, the CA200z will understand the command will operate over ZA.
- **<Micro Name>** are text strings (without blank spaces) that identify the MIC inputs in the unit. In the CA200Z there are just two possible values for this parameter:
  - MICRO1
  - MICRO2
- **<Output Mode>** are text strings (without blank spaces) that identify the amplifier's output working mode. In the CA200Z there are just four possible values for this parameter:
  - STEREO
  - MONO
  - BRIDGE
  - ZONES
- **<Zone Label>** is a text string that contains the customized name for a zone that the CA200z will show in its LCD display. The maximum length for this string is 17 characters, being ignored those exceeding this limit. Blank characters are not allowed. A valid example: MAIN_HALL

- **<Display Mode>** are text strings (without blank spaces) that identify the LCD display working mode. In the CA200Z there are just three possible values for this parameter:
    - ON
    - DIMMED
    - OFF
- **<Contrast Level>** are numerical values in the [0…100] range that define the LCD display contrast level.
- **<Assign Value>** are text strings (without blank spaces) that identify the Talkover / Pager function assignment for a MIC input towards the device's outputs. In the CA200Z there are just five possible values for this parameter::
    - OFF
    - ZA
    - ZB
    - ZA-B
    - PAGER
- **<Priority>** is a numerical value that defines the Talkover function priority of one MIC input in front of the other inputs in the unit. In the case of the CA200z just two values are valid [1, 2], being "1" the highest priority level and "2" the lower one.
- **<Error ID>** is a numerical value for an error code.
- **"<Error Description>"** is a text chain inside double quotation marks, containing an error description.

SPANISH VERSION

CA-NET RS-232. Protocolo de Control Remoto

NOV 2012

El puerto RS-232 integrado en la serie de amplificadores CA permite a un dispositivo externo establecer comunicación serie empleando para ello el protocolo CA-NET. Dicho protocolo emplea una sintaxis muy similar a la del protocolo TP-NET, y permite a un dispositivo externo obtener y/o modificar el valor de ciertos parámetros del permite a un equipo cliente consultar y modificar diversos parámetros del amplificador (por ejemplo, del CA40 o CA200z), como volúmenes, función MUTE, ecualización, etc.

La comunicación RS-232 debe cumplir con las siguientes especificaciones:

- Baud rate: **9600 (fijo, sin autonegociación)**
- Data bits: **8**
- Parity: **No**
- Stop bits: **1**
- Flow control: **No**

No está permitido mediante la conexión RS-232 más de un acceso simultáneo, desde varios dispositivos externos, al mismo dispositivo CA.

El protocolo es simple y textual, facilitando así la lectura, escritura de código y modificación, y está basado en mensajes, sin necesidad de delimitador de inicio: cada mensaje viene delimitado de forma implícita por el tamaño del paquete RS-232, con un tamaño máximo de mensaje de **80 caracteres ASCII**, siempre incluyendo el carácter **LF** (0x0A) al final de cada mensaje. Todos los textos deben estar escritos en letras mayúsculas.

Para facilitar el procesamiento de los mensajes en sistemas de control tipo EXTRON®, CRESTRON®, AMX®, RTI®, VITY®, MEDIALON®, etc., el dispositivo CA añade el carácter **LF** (0x0A) al final de cada mensaje que envía. De esta forma, si al programa cliente no le da tiempo a procesar los mensajes recibidos de uno en uno, puede concatenar varios mensajes consecutivos en una única cadena de memoria (buffer) para posteriormente volver a separarlos usando el delimitador **LF**. De igual forma, el dispositivo permite interpretar varios mensajes recibidos en un solo paquete RS-232 usando el citado delimitador.

Los mensajes están formados por uno o varios campos, todos ellos separados por espacios en blanco (= espacio en blanco):

<TYPE> [PARAM1] [PARAM2] [PARAM3] [PARAM4][LF]

El primer campo (**TYPE**) define el **tipo de mensaje**, y por tanto el número de parámetros requeridos a continuación (cada tipo de mensaje requiere de un determinado número de parámetros). El campo **TYPE** puede tener los siguientes valores:

- **GET**
- **SET**
- **DATA**
- **ERROR**

En las tablas del final del documento se describen los distintos tipos de mensajes que admite cada dispositivo CA y sus correspondientes parámetros asociados.

Los mensajes tipo **GET** o **SET** son los que pueden ser enviados del cliente al dispositivo CA, mientras que los mensajes **DATA** y **ERROR** son los enviados del dispositivo CA al cliente.

Los mensajes del tipo **SET** enviados por el cliente no tienen realimentación, es decir, el dispositivo CA no envía el mensaje **DATA** correspondiente tras procesar el mensaje **SET**. Es responsabilidad del cliente actualizar el valor internamente con el dato enviado al dispositivo y, en caso de ser necesario, emplear el mensaje **GET** correspondiente para verificar que el parámetro fue correctamente procesado en el dispositivo. Por el contrario, cuando se produce cualquier control local realizado en el dispositivo CA, bien desde el panel frontal del propio dispositivo, bien desde el control a distancia por infrarrojos, el dispositivo CA envía de forma automática el comanda **DATA** asociado mediante su interfaz RS-232.

Existen dos parámetros de los comandos **GET** y **SET** cuyas funciones conviene precisar:

- **AUTOLOAD_PRESET1**: su valor (ON/OFF) determina si el “preset” número 1 debe ser recuperado cada vez que el equipo sea puesto en marcha, determinando así sus condiciones iniciales de trabajo
- **PANEL_LOCKED**: su valor (ON/OFF) determina si el panel de control del frontal del equipo (el control giratorio digital en el caso del CA40 y el control giratorio más las teclas de función en el caso del CA200z) se encuentra habilitado (PANEL_LOCKED=OFF) o inhabilitado (PANEL_LOCKED=ON) para su manipulación. (vea el manual de usuario del CA40 ó CA200z para más detalles)

NOTAS:

- Los valores numéricos son siempre números enteros sin signo (números positivos sin decimales)

- **<Input Name>** son cadenas de texto que identifican el canal de entrada de audio (o combinación de canales de entrada) activo en el dispositivo CA.

  En el caso del CA40, existen únicamente 5 posibles valores:

  - LINE1
  - LINE2
  - MICRO
  - LINE1_AND_MICRO
  - LINE2_AND_MICRO

  En el caso del CA200z, existen únicamente 6 posibles valores:

  - LINE1
  - LINE2
  - LINE2
  - LINE4
  - MICRO1
  - MICRO2

- **<Preset Number>** es un valor numérico que identifica uno de los distintos Preset disponibles en la memoria del dispositivo CA. Este valor puede estar en el rango [1..5].
- **<Volume Level>** son valores numéricos en el rango [0..64] que definen valores en una escala equivalente a [-inf...Volumen_Máximo] en incrementos de 1.25 dB.
- **<Tone Level>** son valores numéricos en el rango [-10…10] que definen valores en una escala equivalente a [-10, -8, -6, -4, -2, 0, 2, 4, 6, 8, 10] dB. Si el valor numérico usado no se encuentra en esta lista, la unidad responderá con un mensaje de error.
- **<Increment Value>** son valores numéricos en el rango [0…64] que definen valores en una escala equivalente a [Increment Value]x(1.25) dB, empleados para incrementar o decrementar el valor absoluto actual de un nivel.

- **<Threshold Level>** los únicos valores admisibles en este campo son 3 [20, 25, 30]. Define valores en una escala equivalente a [20, 25, 30] dB por debajo del nivel nominal de una entrada de audio determinada. Si el valor numérico usado no se encuentra en esta lista, la unidad responderá con un mensaje de error.

- **<Depth Level>** los únicos valores admisibles en este campo son 4 [20, 30, 60, 80]. Define valores en una escala equivalente a [20, 30, 60, 80] dB. Si el valor numérico usado no se encuentra en esta lista, la unidad responderá con un mensaje de error.

- **<Attack Time Value>** los únicos valores admisibles en este campo son 4 [50, 100, 200, 300]. Define valores en una escala equivalente a [50, 100, 200, 300] milisegundos. Si el valor numérico usado no se encuentra en esta lista, la unidad responderá con un mensaje de error.

- **<Release Time Value>** los únicos valores admisibles en este campo son 5 [300, 500, 1000, 2000, 3000]. Define valores en una escala equivalente a [300, 500, 1000, 2000, 3000] milisegundos. Si el valor numérico usado no se encuentra en esta lista, la unidad responderá con un mensaje de error.

- **<Remote Select Value>** son cadenas de texto que identifican el modo de trabajo del selector analógico (0- 10 VDC) conectado a un puerto "REMOTE" del dispositivo CA.

  En el caso del CA40 existen únicamente dos posibles valores para este parámetro:

  - INPUTS
  - PRESETS

  En el caso del CA200Z existen únicamente tres posibles valores para este parámetro:

  - OFF
  - INPUTS
  - PRESETS

  Nota: En el *CA40 el único puerto REMOTE disponible admite la conexión de una unidad tipo* **WPmVOL-SR**, *la cual incluye un control giratorio de volumen y un conmutador rotatorio de 5 posiciones, o* ***selector***. *El selector puede usarse en uno de estos dos modos:*

- *INPUTS: para seleccionar la fuente(s) de audio activa(s) (LINE1, LINE2, MICRO, LINE1_AND_MICRO ó LINE2_AND_MICRO)*
- *PRESETS: para recuperar uno de los 5 "presets" almacenados en la memoria de la unidad (cada preset contiene la configuración completa de la unidad CA40, incluyendo volúmenes, ecualización, etc.)*

*El modo de trabajo por defecto (de fábrica) del selector es **INPUTS**, y únicamente puede ser cambiado al modo **PRESETS** mediante una conexión RS-232, y empleando los comandos del presente protocolo.*

En el CA200z existen dos puertos REMOTE independientes, cada uno de ellos con la capacidad de controlar una de las salidas del equipo cuando éste se encuentra en el modo de trabajo ZONES A/B. Cada selector puede usarse en uno de estos dos modos:

- *INPUTS: para seleccionar la fuente de audio LINE activa para la salida asociada (OFF, LINE1, LINE2, LINE3 ó LINE4)*
- *PRESETS: para recuperar uno de los 5 "presets" almacenados en la memoria de la unidad (cada preset contiene la configuración completa de la unidad CA200z, incluyendo volúmenes, ecualización, etc.). Sólo uno de los dos puertos REMOTE puede ser configurado para realizar una selección de presets, no ambos simultáneamente.*
- *OFF: puerto REMOTE desactivado*

- **<Zone>** son cadenas de texto que identifican la zona sobre la que opera el comando GET o SET en cuestión. En el caso del CA200Z existen únicamente dos posibles valores para este parámetro:
  - ZA (salida marcada como ZA o L)
  - ZB (salida marcada como ZB o R)

  Si no se especifica el parametro <Zone> el CA200z interpreta por defecto que el comando se refiere a la ZA.

- **<Micro Name>** son cadenas de texto que identifican a las entrada de micrófono de la unidad. En el caso del CA200z existen únicamente dos posibles valores para este parámetro:
  - MICRO1
  - MICRO2

- **<Output Mode>** son cadenas de texto que identifican el modo de trabajo del amplificador. En el caso del CA200z existen únicamente cuatro posibles valores para este parámetro:
    - STEREO
    - MONO
    - BRIDGE
    - ZONES
- **<Zone Label>** es una cadena de texto que contienen el nombre personalizado de zona que será mostrado en la pantalla LCD del CA200z. La longitud máxima de dicha cadena es de 17 caracteres (siendo ignorados los que excedan ese límite), no siendo válido el carácter de espacio en blanco. Ejemplo válido: SALON_PRINCIPAL
- **<Display Mode>** son cadenas de texto que identifican el modo de trabajo de la pantalla LCD del panel frontal del equipo. En el caso del CA200Z existen únicamente tres posibles valores para este parámetro:
    - ON
    - DIMMED
    - OFF
- **<Contrast Level>** es un valor numérico en el rango [0..100] que determina el contraste de la pantalla LCD.
- **<Assign Value>** son cadenas de texto que identifican la asignacion de la función de Talkover / Pager de una entrada de micrófono hacia las salidas del equipo. En el caso del CA200z existen únicamente cinco posibles valores para este parámetro:
    - OFF
    - ZA
    - ZB
    - ZA-B
    - PAGER
- **<Priority>** es un valor numérico que indica la prioridad de la función Talkover de una entrada frente a la prioridad de la función Talkover de otras entradas. En el caso del CA200z existen los únicos valores admisibles en este campo son 2 [1, 2]. La prioridad mayor corresponde a "1" y la menor a "2".

- **<Error ID>** es un valor numérico que codifica un tipo de error.
- **“<Error Description>”** es una cadena de texto encerrada entre comillas dobles que contiene una descripción del error.

CA40 AMPLIFIER

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
GET	ALL				Dumps current device status (with DATA messages)
	PRESET_NUMBER				Gets the current PRESET number
	OUTPUT_MODE				Gets the current amplifier OUTPUT MODE
	INPUT				Gets the current active INPUTs
	MUTE				Gets the current MUTE status
	MASTER_VOL				Gets the current MASTER VOLUME
	LINE1_VOL				Gets the current LINE1 VOLUME
	LINE2_VOL				Gets the current LINE2 VOLUME
	MICRO_VOL				Gets the current MICRO VOLUME
	LINE1_BASS				Gets the current LINE1 BASS LEVEL
	LINE2_BASS				Gets the current LINE2 BASS LEVEL
	MICRO_BASS				Gets the current MICRO BASS LEVEL
	LINE1_TREBLE				Gets the current LINE1 TREBLE LEVEL
	LINE2_TREBLE				Gets the current LINE2 TREBLE LEVEL
	MICRO_TREBLE				Gets the current MICRO TREBLE LEVEL
	GATE				Gets the current NOISE GATE ON/OFF status
	GATE_THRESHOLD				Gets the current NOISE GATE THRESHOLD LEVEL
	TALKOVER				Gets the current TALKOVER ON/OFF status
	TALKOVER_THRESHOLD				Gets the current TALKOVER THRESHOLD LEVEL
	TALKOVER_ATTACK				Gets the current TALKOVER ATTACK TIME
	TALKOVER_RELEASE				Gets the current TALKOVER RELEASE TIME
	TALKOVER_DEPTH				Gets the current TALKOVER DEPTH (attenuation)
	REMOTE				Gets the current REMOTE ON/OFF status
	REMOTE_SELECTOR				Gets de current REMOTE SELECTOR function
	AUTO_STANDBY				Gets the current AUTO STANDBY ON/OFF status
	AUTOLOAD_PRESET1				Gets the current AUTOLOAD_PRESET1 at Startup function
	PANEL_LOCKED				Get the current PANEL_ LOCKED (front knob) status
	INFO_MODEL				Gets the Device model name
	INFO_VERSION				Gets the current Firmware Version
SET	LOAD_PRESET	<Preset Number>			Recalls and activates a PRESET
	SAVE_PRESET	<Preset Number>			Saves the current PRESET
	INPUT	<Input Name>			Sets the current active INPUT(s)

	MUTE	ON/OFF			Sets the current MUTE status
	MASTER_VOL	<Volume Level>			Sets the current MASTER VOLUME
	LINE1_VOL	<Volume Level>			Sets the current LINE1 VOLUME
	LINE2_VOL	<Volume Level>			Sets the current LINE2 VOLUME
	MICRO_VOL	<Volume Level>			Sets the current MICRO VOLUME
	LINE1_BASS	<Tone Level>			Sets the current LINE1 BASS LEVEL
	LINE2_BASS	<Tone Level>			Sets the current LINE2 BASS LEVEL
	MICRO_BASS	<Tone Level>			Sets the current MICRO BASS LEVEL
	LINE1_TREBLE	<Tone Level>			Sets the current LINE1 TREBLE LEVEL
	LINE2_TREBLE	<Tone Level>			Sets the current LINE2 TREBLE LEVEL
	MICRO_TREBLE	<Tone Level>			Sets the current MICRO TREBLE LEVEL
	GATE_THRESHOLD	<Threshold Level>			Sets the current NOISE GATE THRESHOLD LEVEL
	TALKOVER_THRESHOLD	<Threshold Level>			Sets the current TALKOVER THRESHOLD LEVEL
	TALKOVER_ATTACK	<Attack Time Value>			Sets the current TALKOVER ATTACK TIME
	TALKOVER_RELEASE	<Release Time Value>			Sets the current TALKOVER RELEASE TIME
	TALKOVER_DEPTH	<Depth Level>			Sets the current TALKOVER DEPTH (attenuation)
	MASTER_VOL_INC	<Increment Value>			Increments the current MASTER VOLUME
	MASTER_VOL_DEC	<Increment Value>			Decrements the current MASTER VOLUME
	REMOTE_SELECTOR	<Remote Selector Value>			Sets de current REMOTE SELECTOR function
	AUTOLOAD_PRESET1	ON/OFF			Sets the current AUTOLOAD_PRESET1 at Startup function
	PANEL_LOCKED	ON/OFF			Sets the current PANEL_ LOCKED (front knob) status
DATA	PRESET_NUMBER	<Preset Number>			Shows the current PRESET
	PRESET_DONE				Shows that the last SET LOAD_PRESET n command has been processed: the preset is loaded and active
	OUTPUT_MODE	<OutputMode>			Shows the current amplifier OUTPUT MODE (MONO/STEREO/BRIDGE)
	INPUT	<Input Name>			Shows the current active INPUT(s)
	MUTE	ON/OFF			Shows the current MUTE status
	MASTER_VOL	<Volume Level>			Shows the current MASTER VOLUME
	LINE1_VOL	<Volume Level>			Shows the current LINE1 VOLUME
	LINE2_VOL	<Volume Level>			Shows the current LINE2 VOLUME
	MICRO_VOL	<Volume Level>			Shows the current MICRO VOLUME
	LINE1_BASS	<Tone Level>			Shows the current LINE1 BASS LEVEL
	LINE2_BASS	<Tone Level>			Shows the current LINE2 BASS LEVEL
	MICRO_BASS	<Tone Level>			Shows the current MICRO BASS LEVEL
	LINE1_TREBLE	<Tone Level>			Shows the current LINE1 TREBLE LEVEL

	LINE2_TREBLE	<Tone Level>			Shows the current LINE2 TREBLE LEVEL
	MICRO_TREBLE	<Tone Level>			Shows the current MICRO TREBLE LEVEL
	GATE	ON/OFF			Shows the current NOISE GATE ON/OFF status
	GATE_THRESHOLD	<Threshold Level>			Shows the current NOISE GATE THRESHOLD LEVEL
	TALKOVER	ON/OFF			Shows the current TALKOVER ON/OFF status
	TALKOVER_THRESHOLD	<Threshold Level>			Shows the current TALKOVER THRESHOLD LEVEL
	TALKOVER_ATTACK	<Attack Time Value>			Shows the current TALKOVER ATTACK TIME
	TALKOVER_RELEASE	<Release Time Value>			Shows the current TALKOVER RELEASE TIME
	TALKOVER_DEPTH	<Depth Level>			Shows the current TALKOVER DEPTH (attenuation)
	REMOTE	ON/OFF			Shows the current REMOTE ON/OFF status
	REMOTE_SELECTOR	<Remote Selector Value>			Shows de current REMOTE SELECTOR function
	AUTO_STANDBY	ON/OFF			Shows the current STANSBY ON/OFF status
	AUTOLOAD_PRESET1	ON/OFF			Shows the current AUTOLOAD_PRESET1 at Startup function
	PANEL_LOCKED	ON/OFF			Shows the current PANEL_ LOCKED (front knob) status
	INFO_MODEL	<Device Model>			Shows the Device Model
	INFO_VERSION	<Firmware Version>			Shows the current Firmware Version
ERROR	<Error ID>	“<Error Description>”			Informs about an error

CA200z AMPLIFIER

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPCIÓN
GET	ALL				Dumps current device status (with DATA messages)
	POWER				Gets the current POWER status
	PRESET_NUMBER				Gets the current PRESET number
	OUTPUT_MODE				Gets the current amplifier OUTPUT MODE
	ZONE_LABEL	<Zone Label>	<Zone>		Gets the current LABEL (name) for the specified ZONE
	MUTE	<Zone>			Gets the current MUTE status for the specified ZONE
	MASTER_VOL	<Zone>			Gets the current MASTER VOLUME for the specified ZONE
	INPUT	<Input Name>	<Zone>		Gets the status (ON/OFF) for the specified INPUT at the specified ZONE
	VOL	<Input Name>	<Zone>		Gets the current VOLUME for the specified INPUT at the specified ZONE
	BASS	<Input Name>	<Zone>		Gets the current BASS LEVEL for the specified INPUT at the specified ZONE
	TREBLE	<Input Name>	<Zone>		Gets the current TREBLE LEVEL for the specified INPUT at the specified ZONE
	GATE	<Micro Name>			Gets the current NOISE GATE status (ON or OFF) for the specified MIC INPUT
	GATE_THRESHOLD	<Micro Name>			Gets the current NOISE GATE THRESHOLD LEVEL for the specified MIC INPUT
	TALKOVER_ASSIGN	<Micro Name>			Gets the current TALKOVER ASSIGN for the specified MIC INPUT
	TALKOVER_PRIORITY	<Micro Name>			Gets the current TALKOVER PRIORITY for the specified MIC INPUT
	TALKOVER_ THRESHOLD	<Micro Name>			Gets the current TALKOVER THRESHOLD LEVEL for the specified MIC INPUT
	TALKOVER_ATTACK	<Micro Name>			Gets the current TALKOVER ATTACK TIME for the specified MIC INPUT
	TALKOVER_RELEASE	<Micro Name>			Gets the current TALKOVER RELEASE TIME for the specified MIC INPUT
	TALKOVER_DEPTH	<Micro Name>			Gets the current TALKOVER DEPTH (attenuation) for the specified MIC INPUT
	REMOTE_SELECTOR	<Zone>			Gets de current REMOTE SELECTOR function for the specified ZONE
	IR_REMOTE				Gets the current IR REMOTE status (ON or OFF)
	DISPLAY_MODE				Gets the current DISPLAY MODE
	LCD_CONTRAST				Gets the current DISPLAY CONTRAST level
	AUTO_STANDBY				Gets the current AUTO STANDBY function status (ON or OFF)
	AUTOLOAD_PRESET1				Gets the current AUTOLOAD_PRESET1 at Startup function
	PANEL_LOCKED				Gets the current PANEL_LOCKED (front panel controls) status
	INFO_MODEL				Gets the Device model name
	INFO_VERSION				Gets the current Firmware Version

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPCIÓN
SET	POWER	ON / STANDBY			Sets the current amplifier POWER status
	LOAD_PRESET	<Preset Number>			Recalls and activates a PRESET
	SAVE_PRESET	<Preset Number>			Saves the current PRESET
	OUTPUT_MODE	<OutputMode>			Sets the current amplifier OUTPUT MODE
	ZONE_LABEL	<Zone Label>	<Zone>		Sets the current LABEL (name) for the specified ZONE
	MUTE	ON/OFF	<Zone>		Sets the current MUTE status for the specified ZONE
	MASTER_VOL	<Volume Level>	<Zone>		Sets the current MASTER VOLUME for the specified ZONE
	INPUT	<Input Name>	ON/OFF	<Zone>	Sets the status (ON/OFF) for the specified INPUT at the specified ZONE
	VOL	<Input Name>	<Volume Level>	<Zone>	Sets the current VOLUME for the specified INPUT at the specified ZONE
	BASS	<Input Name>	<Tone Level>	<Zone>	Sets the current BASS LEVEL for the specified INPUT at the specified ZONE
	TREBLE	<Input Name>	<Tone Level>	<Zone>	Sets the current TREBLE LEVEL for the specified INPUT at the specified ZONE
	GATE	<Micro Name>	ON/OFF		Sets the current NOISE GATE status (ON or OFF) for the specified MIC INPUT
	GATE_THRESHOLD	<Micro Name>	<Threshold Level>		Sets the current NOISE GATE THRESHOLD LEVEL for the specified MIC INPUT
	TALKOVER_ASSIGN	<Micro Name>	<Assign Value>		Sets the current TALKOVER ASSIGN for the specified MIC INPUT
	TALKOVER_PRIORITY	<Micro Name>	<Priority number>		Sets the current TALKOVER PRIORITY for the specified MIC INPUT
	TALKOVER_THRESHOLD	<Micro Name>	<Threshold Level>		Sets the current TALKOVER THRESHOLD LEVEL for the specified MIC INPUT
	TALKOVER_ATTACK	<Micro Name>	<Attack Time Value>		Sets the current TALKOVER ATTACK TIME for the specified MIC INPUT
	TALKOVER_RELEASE	<Micro Name>	<Release Time Value>		Sets the current TALKOVER RELEASE TIME for the specified MIC INPUT
	TALKOVER_DEPTH	<Micro Name>	<Depth Level>		Sets the current TALKOVER DEPTH (attenuation) for the specified MIC INPUT
	MASTER_VOL_INC	<Increment Value>	<Zone>		Increments the current MASTER VOLUME for the specified ZONE
	MASTER_VOL_DEC	<Increment Value>	<Zone>		Decrements the current MASTER VOLUME for the specified ZONE
	REMOTE_SELECTOR	<Rem Select Value>	<Zone>		Sets de current REMOTE SELECTOR function for the specified ZONE
	IR_REMOTE	ON/OFF			Sets the current IR REMOTE status (ON or OFF)
	DISPLAY_MODE	<Display Mode>			Sets the current DISPLAY MODE
	LCD_CONTRAST	<Contrast Level>			Sets the current DISPLAY CONTRAST level
	AUTO_STANDBY	ON/OFF			Sets the current AUTO STANDBY function status (ON or OFF)
	AUTOLOAD_PRESET1	ON/OFF			Sets the current AUTOLOAD_PRESET1 at Startup function
	PANEL_LOCKED	ON/OFF			Sets the current PANEL_LOCKED (front panel controls) status

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPCIÓN
DATA	POWER	ON / STANDBY			Shows the current amplifier POWER status
	PRESET_NUMBER	<Preset Number>			Shows the current PRESET NUMBER
	PRESET_DONE				Shows that the last SET LOAD_PRESET n command has been processed: the preset is loaded and active
	OUTPUT_MODE	<Output Mode>			Shows the current amplifier OUTPUT MODE
	ZONE_LABEL	<Zone Label>	<Zone>		Show the current LABEL (name) for the specified ZONE
	MUTE	ON/OFF	<Zone>		Shows the current MUTE status for the specified ZONE
	MASTER_VOL	<Volume Level>	<Zone>		Shows the current MASTER VOLUME for the specified ZONE
	INPUT	<Input Name>	ON/OFF	<Zone>	Shows the status (ON/OFF) for the specified INPUT at the specified ZONE
	VOL	<Input Name>	<Volume Level>	<Zone>	Shows the current VOLUME for the specified INPUT at the specified ZONE
	BASS	<Input Name>	<Tone Level>	<Zone>	Shows the current BASS LEVEL for the specified INPUT at the specified ZONE
	TREBLE	<Input Name>	<Tone Level>	<Zone>	Shows the current TREBLE LEVEL for the specified INPUT at the specified ZONE
	GATE	<Micro Name>	ON/OFF		Shows the current NOISE GATE status (ON or OFF) for the specified MIC INPUT
	GATE_THRESHOLD	<Micro Name>	<Threshold Level>		Shows the current NOISE GATE THRESHOLD LEVEL for the specified MIC INPUT
	TALKOVER_ASSIGN	<Micro Name>	<Assign Value>		Shows the current TALKOVER ASSIGN for the specified MIC INPUT
	TALKOVER_PRIORITY	<Micro Name>	<Priority number>		Shows the current TALKOVER PRIORITY for the specified MIC INPUT
	TALKOVER_THRESHOLD	<Micro Name>	<Threshold Level>		Shows the current TALKOVER THRESHOLD LEVEL for the specified MIC INPUT
	TALKOVER_ATTACK	<Micro Name>	<Attack Time Value>		Shows the current TALKOVER ATTACK TIME for the specified MIC INPUT
	TALKOVER_RELEASE	<Micro Name>	<Release Time Value>		Shows the current TALKOVER RELEASE TIME for the specified MIC INPUT
	TALKOVER_DEPTH	<Micro Name>	<Depth Level>		Shows the current TALKOVER DEPTH (attenuation) for the specified MIC INPUT
	REMOTE_SELECTOR	<Rem Select Value>	<Zone>		Shows de current REMOTE SELECTOR function for the specified ZONE
	IR_REMOTE	ON/OFF			Shows the current IR REMOTE status (ON or OFF)
	DISPLAY_MODE	<Display Mode>			Shows the current DISPLAY MODE
	LCD_CONTRAST	<Contrast Level>			Shows the current DISPLAY CONTRAST level
	AUTO_STANDBY	ON/OFF			Shows the current AUTO STANDBY function status (ON or OFF)
	AUTOLOAD_PRESET1	ON/OFF			Shows the current AUTOLOAD_PRESET1 at Startup function
	PANEL_LOCKED	ON/OFF			Shows the current PANEL_LOCKED (front panel controls) status
	INFO_MODEL	<Device Model>			Shows the Device model name
	INFO_VERSION	<Firmware Version>			Shows the current Firmware Version

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPCIÓN
ERROR	<Error ID>	“<Error Description>”			Informs about an error

ERROR CODES

ERROR ID	DESCRIPTION
0	No Error
1	Invalid field TYPE
2	Invalid field PARAM1
3	Invalid field PARAM2
4	Invalid field PARAM3
5	Invalid field PARAM4
9	Rejected Message
10	Message too long (more than 80 characters)
11	Unsupported Preset number
17	Invalid Level value